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The Dark Bordered Beauty moth at Askham Bog at the end of the 19th Century

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The Dark Bordered Beauty moth *Epione vespertaria* (Lepidoptera: Geometridae) is a Red Data Book species (Shirt, 1987) currently thought to be restricted in England to a single site, Strensall Common c.10km north of York (Baker, 2012; Baker *et al.*, 2016). York has been well known nationally as a locality for the moth since the 19th Century (Porritt, 1883; Frost *et al.*, 2011; Baker, 2012). Prest's 1874 record (Anon, 1878) is the earliest published record I have located that mentions a specific site, although there are earlier publications about the moth from the York area (e.g. Prest, 1858; Birks, 1860; Wesley, 1872). York sites mentioned on specimen labels or in the published literature include Strensall and the adjacent locality of Sandburn, east of Strensall along the Malton Road (A64) (Baker, 2012; Frost *et al.*, 2011). Morris (1871) also mentions 'near Stockton Station and Stockton Common near York', which are immediately adjacent to Sandburn and Strensall Common. James (1919) mentions collecting it at 'Warthill', which is a village 4km to the south-east of Sandburn, but probably meant Warthill Station, which is what Stockton Station was renamed in 1872 and was the station-stop for naturalists visiting Sandburn (Anon, 1883-4). These areas are all adjacent and probably represent a single population of the moth. There are no other localities near York in the Yorkshire moth database (www.yorkshiremoths.info).



Figure 1. One of the Dark Bordered Beauty specimens, BMNH(E)1857272, collected from Askham Bog in 1893 by S. Walker. Reproduced under Creative Commons Attribution licence BY/4.0 from <http://data.nhm.ac.uk/object/f957a9e0-de41-4517-aa16-a36a6211d256>

Rothschild and Marren (1997, p.100), however, claim that Dark Bordered Beauty was found at Askham Bog, a very well-recorded Yorkshire Wildlife Trust reserve and Site of Special Scientific Interest immediately to the south-west of York: 'To Lepidopterists its greatest prize was the Dark Bordered Beauty moth'. When reading this statement for the first time recently, I assumed that there had been some confusion between Askham and Strensall. However, browsing the Natural History Museum, London (NHML) online collections for Dark Bordered Beauty specimens I encountered three labelled from Askham Bog (Table 1, Figure 1) (<http://www.nhm.ac.uk/our-science/collections/entomology-collections.html>, accessed 6 September 2018). All are females, from two years in the last decade of the 19th century. Two were collected in 1893 by 'S. Walker', Samuel Walker of York (e.g. Walker, 1883). Forty-two Dark Bordered Beauty specimens now in the NHML collection are attributed to Walker. Of these, 23 are labelled 'Sandburn', 17 'York', and two 'Askham Bog'. The Askham specimens are the earliest, the remainder being collected from 1896 to 1906. The other NHML specimen from Askham is from 1898 and has no collector details.

Subsequent searches on the Global Biodiversity Information Facility (GBIF, <https://www.gbif.org/>, accessed 9/11/2018), and The National Biodiversity Network Atlas (<https://nbnatlas.org/>) identified a further three records from Askham Bog, attributed to the Nottingham City Museums and Galleries Insect Collections Database. I contacted Sheila Wright, curator at Nottingham Natural History Museum, and VC56 moth recorder. She confirmed that the specimens are in the British Lepidoptera Collection of Nottingham Natural History Museum at Wollaton Hall, and are listed in Table 1. Two are male and one is female, all collected by 'R. Dutton', Robert Dutton of York (e.g. Dutton, 1891). Dutton and Walker were friends and often collected together with another York collector, William Hewett (e.g. Hewett, 1891).

Table 1: Dark Bordered Beauty specimens from the Natural History Museum, London (NHML), and Nottingham Natural History Museum (NNHM), Wollaton Hall, collected at Askham Bog.

Location	Catalogue number	Sex	Collection date	Collector name	Collection details
NHML	BMNH(E)185727	Female	1893	S. Walker	Cockayne-Kettlewell Collection BM 1947
NHML	BMNH(E)1857541	Female	1893	S. Walker	Hawkins bequest 1970
NHML	BMNH(E)1857419	Female	1898	-	-
NNHM	-	Male	1893	R. Dutton	-
NNHM	-	Male	1893	R. Dutton	-
NNHM	-	Female	1893	R. Dutton	-

I contacted Peter Marren to establish the source of the claim in Rothschild and Marren (*loc. cit.*). He said that his main source of information on the reserve had been the original Society for the Promotion of Nature Reserves (SPNR) site files, but otherwise he could not remember the source. There is no mention of Dark Bordered Beauty in the SPNR site files (<https://www.wildlifetrusts.org/about-us/rothschilds-list#archive>) so the source of the claim will likely remain lost.

Fitter and Smith (1979, Appendix 6) do not mention Dark Bordered Beauty in their list of Lepidoptera recorded from Askham Bog and the site is so frequently visited that it has doubtless long been extinct there and likely shortly after the above specimens were collected. Neither does Porritt mention the site for this moth in any of his lists (Frost *et al.*, 2011), nor do any subsequent reviews of Yorkshire Lepidoptera (Sutton and Beaumont, 1989; Beaumont, 2002). Fitter and Smith (1979, Appendix 3) do list the York host plant, Creeping Willow *Salix repens* as being continually present at Askham from 1900 until after 1970 in wet grassland in the margins of the Bog, so the presence of a breeding population of the moth at some time in the past is feasible. The presence of unambiguously labelled specimens would make the Walker and Dutton specimens a new VC64 record for the species, retrospective by 125 years.

The past presence of Dark Bordered Beauty at Askham Bog is interesting from a conservation perspective, as it illustrates how the moth's range in the York area has changed through time. It is also helpful because the Biodiversity Action Plan for this moth includes the aim to establish more populations of the moth (UK Biodiversity Group, 1999). Past locations, especially in the York area, are obviously interesting from this perspective, and Askham Bog is a site that could potentially be managed with such a species in mind.

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